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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/586,963	06/05/2000	Kazuo Tanaka	JAO 39894.01	7515

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EXAMINER

NGUYEN, CUONG QUANG

ART UNIT PAPER NUMBER

2811

DATE MAILED: 07/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application

09/586,963

Applicant(s)

TANAKA, KAZUO

Examiner

Cuong Q Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-8, 12-14 and 21 is/are pending in the application.
- 4a) Of the above claim(s) 4, 5, 7-11, 13, 14 and 21 is/are withdrawn from consideration.

5) ☐ Claim(s) ____ is/are allowed.

6) ☒ Claim(s) 2-3, 6, 12 is/are rejected.

7) ☐ Claim(s) ____ is/are objected to.

8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 U.S.C. § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2-3, 6 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sato (US 5,739,587) in view of Fujiki et al. (US 5,736,791)

Sato discloses a device including a bonding pad, wherein the bonding pad is a multiple wiring structure comprising: a first conductive layer (510) connected to a conductive member (140, a bonding pad layer); a second conductive layer (530) with a planar network pattern formed below the first conductive layer; a third conductive layer (550) with a planar network pattern formed below the second conductive layer; a first insulating interlayer (520) formed between the first and second conductive layers; a first through hole formed in the first insulating interlayer; a fourth conductive layer (601) filling the first through hole; a second insulating interlayer (540) formed between the second and the third conductive layer; a second through hole formed in the second insulating interlayer such that the first and second through holes are axially aligned and

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the first through hole disposed substantially directly above the second through hole; a fifth conductive layer (611) filling the second through hole. See Sato's Fig.11.

Sato does not teach that the second conductive layer has a plurality of openings.

Fujiki et al. discloses a multiple wiring structure comprising: a first conductive layer (6) connected to a bonding pad (10) for external connection; a second conductive layer (3) formed under conductive layer (6) having a plurality of openings (13); a first insulating interlayer formed between the first and second conductive layers, wherein the first insulating interlayer fills the openings (13) to connect a second insulating interlayer (2) formed below the second conductive layer. See Fujiki et al's Fig.1 and Fig.3.

It would have been obvious to one of ordinary skill in the art to form the second conductive layer including the openings as taught by Fujiki et al. into Sato's device in order to provide stress relief for the conductive layer. See Fujiki et al. col.9, lines 14-31.

It is noted that the limitation "wherein the plurality of opening are sandwiched between the first and third conductive layers" is flew naturally in the device is formed by the combination of Sato and Fujiki et al with the second conductive layer including the openings.

It is also noted that when one of ordinary skill in the art incorporate the second conductive layer including a plurality of openings into Sato's device. It is inherent that the first insulating interlayer (520) filled the openings in the second conductive layer so

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that the first insulating interlayer (520) with the second insulating interlayer (540) contiguous between first and third conductive layers.

Response to Arguments

2. Applicant's arguments with respect to claims 2-3, 6 and 12 have been considered but are not persuasive.

Applicants argue that Sato fails to teach that openings are formed in the second conductive layer which is sandwiched between two conductive layers. In response, the device is formed by the combination of Sato and Fujiki et al includes the second conductive layer having the openings which is located at between first and second conductive layers.

Applicants argue that Fujiki et al. does not teach a third conductive layer. In response, only teaching of Fujiki et al. is incorporated into Sato's device is that the conductive layer has a plurality of openings which is formed under an upper conductive layer (the first conductive layer) in order to provide stress relief for the conductive layer.

The test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

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Conclusion

3. Papers related to this application may be submitted to Technology center (TC) 2800 by facsimile transmission. Papers should be faxed to TC 2800 via the TC 2800 Fax center located in Crystal Plaza 4, room 4-C23. The faxing of such papers must conform with the notice published in the Official Gazette, 1096 OG 30 (November 15, 1989). The Group 2811 Fax Center number is (703) 308-7722 and 308-7724. The Group 2811 Fax Center is to be used only for papers related to Group 2811 applications.

4. Any inquiry concerning this communication or any earlier communication from the Examiner should be directed to CUONG Q NGUYEN whose telephone number is (703) 308-1293. The Examiner is in the Office generally between the hours of 6:30 AM to 5:00 PM (Eastern Standard Time) Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor TOM THOMAS who can be reached on (703) 308-2772. The fax phone number for the organization where this application or proceeding is assigned is (703) 308-7722 or 308-7724.

Any inquiry of a general nature or relating to the status of this application should be directed to the Technology Center Receptionists whose telephone number is 308-0956.

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A handwritten signature in black ink, appearing to read 'Cuong Nguyen', with a stylized, cursive script.

Cuong Nguyen

Primary examiner

July 28, 2003